

We claim:

1. A hydraulic drive device, comprising:

a housing forming an internal sump;

5 a center section mounted entirely within the housing and comprising a pump running surface, a motor running surface and hydraulic porting formed therein;

a rotatable hydraulic pump block mounted on the pump running surface of the center section;

a pump shaft extending into the housing to drive the pump block;

10 a rotatable hydraulic motor block mounted on the motor running surface of the center section;

a single output shaft driven by the motor block and extending out of the housing, wherein the longitudinal axis of the output shaft is perpendicular to the longitudinal axis of the pump shaft.

15 2. A hydraulic drive device as set forth in Claim 1, further comprising a swash plate engaged to the hydraulic pump and a control arm engaged to the swash plate.

3. A hydraulic drive device as set forth in Claim 2 wherein the swash plate control arm extends out of the housing on a side opposite to the output shaft.

20 4. A hydrostatic drive device as set forth in Claim 2, wherein the pump shaft extends through the center section and drives a separate charge pump mounted on an external surface of the housing.

5. A hydrostatic drive device, comprising:

a hydrostatic transmission mounted in a housing, wherein the hydrostatic transmission comprises:

a center section mounted entirely within the housing and having a pump running surface, a motor running surface and hydraulic porting formed therein,

a rotatable hydraulic pump block mounted on the pump running surface of the center section and

5 a rotatable hydraulic motor block mounted on the motor running surface of the center section;

a pump shaft extending into the housing to drive the pump block; and

a single output shaft driven by the hydrostatic transmission and extending out of the housing, wherein the longitudinal axis of the output shaft is perpendicular to the longitudinal axis
10 of the pump shaft.

6. A hydrostatic drive device as set forth in Claim 5, wherein the pump shaft extends through the center section and drives a separate charge pump.

7. A hydrostatic drive device as set forth in Claim 6, wherein the charge pump is mounted on an external surface of the housing.

15 8. A hydrostatic drive device as set forth in Claim 5, wherein housing comprises a first housing member joined to a second housing member at a junction surface that is parallel to the longitudinal axis of the output shaft.

9. A hydrostatic drive device comprising:

a housing;

20 a center section mounted within the housing and having hydraulic porting formed therein;

a hydraulic pump and a hydraulic motor mounted on the center section and in fluid communication with each other through the hydraulic porting;

an input shaft extending into the housing to drive the hydraulic pump;

a single shaft mounted in the housing perpendicular to the input shaft driven by the hydraulic motor; and

a charge pump mounted to an exterior surface of the housing on a side of the housing opposite to the input shaft.

5 10. A hydrostatic drive device as set forth in Claim 9, wherein the charge pump receives fluid from a sump.

11. A hydrostatic drive device as set forth in Claim 10, wherein the sump is internal to the housing.

12. A hydrostatic drive device as set forth in Claim 10, wherein the sump is external to the
10 housing.

13. A hydrostatic drive device as set forth in Claim 9, further comprising an external sump and a filter fluidly connected to the charge pump, wherein the charge pump receives filtered fluid from the sump.

14. A hydrostatic drive device as set forth in Claim 9, wherein the lower housing and center
15 section form a gallery.

15. A hydrostatic drive device as set forth in Claim 9, wherein an interior gallery is formed between an inner surface of the housing and the center section and an exterior gallery is formed between an outer surface of the housing and the charge pump with a passage formed through the housing connecting the exterior gallery to interior gallery.

20 16. A hydrostatic drive device as set forth in Claim 9, wherein an auxiliary pump is mounted proximate to the charge pump.

17. A hydrostatic drive device comprising:
- a housing;
 - a center section mounted within the housing and having hydraulic porting formed therein;
 - a hydraulic pump and a hydraulic motor mounted on the center section in fluid
- 5 communication with each other through the hydraulic porting;
- a single input shaft having a first end mounted outside the housing and a second end extending into the housing and driving the hydraulic pump;
 - a single output shaft mounted in the housing perpendicular to the input shaft and driven by the hydraulic motor.
- 10 18. A hydrostatic drive device as set forth in Claim 17, further comprising a charge pump mounted to an exterior surface of the housing such that the center section is positioned between the charge pump and first end of the input shaft.
19. A hydrostatic drive device as set forth in Claim 18, wherein an interior gallery is formed between the center section and an interior wall of the housing.
- 15 20. A hydrostatic drive device as set forth in Claim 19, wherein an exterior gallery is formed between an exterior wall of the housing and the charge pump, and wherein a passage through the housing wall connects the interior gallery to the exterior gallery.
21. A hydrostatic drive device as set forth in Claim 18, wherein an auxiliary pump is mounted proximate the charge pump.
- 20 22. A hydrostatic drive device comprising;
- a housing with a mounting flange for attachment to an axle driving device;
 - a center section comprising porting mounted within the housing;
 - a hydraulic pump and a hydraulic motor mounted on the center section in fluid

communication with each other through the hydraulic porting;

an input shaft driving the hydraulic pump and extending from the housing;

an output shaft perpendicular to the input shaft and driven by the hydraulic motor,
wherein no more than one output shaft extends from the housing; and

5 a charge pump mounted to an exterior surface of the housing opposite where the input
shaft extends from the housing.

23. A hydrostatic drive device as set forth in Claim 22, wherein the center section extends
beyond an exterior surface of the housing.

24. A hydrostatic drive device as set forth in Claim 23, wherein a gallery is formed exterior
10 to the housing between a porting plate and the center section.

25. A hydrostatic drive device as set forth in Claim 21, wherein the center section contains a
pressure relief valve positioned between the gallery and a sump formed by the housing.